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Maintenance

MANAGEMENT OF GAS TURBINE ENGINES

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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OPR: 51 LSS/LGLO (Capt Paul B. Ashley)
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Certified by: 51 LG/CC (Col Steven J. Schumacher)
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This instruction implements AFD 21-1, *Managing Aerospace Equipment Maintenance*, AFI 21-104, *Selective Management of Selected Gas Turbine Engines*, PACAFI 21-101, *PACAF Aircraft Maintenance Organization and Procedures* and is in addition to T.O. 00-20-254-1, *Comprehensive Engine Management System Engine Configuration, Status, and TCTO Reporting Procedures*. It provides local directives on unit responsibilities in the management, tracking, control, and status of the 51st Fighter Wing's assigned jet engines. This instruction applies to all units assigned to the 51st Fighter Wing.

SUMMARY OF REVISIONS

Changed to update MICAP upgrade suspense (paragraph 1.1.5.); added TF34s to be included on work packages (paragraph 1.1.11.); adds procedures for reception of spares in wartime (paragraph 1.1.15.); added requirement for Quality Assurance to maintain work package standards (paragraph 3.); changes WRSK acronym to Readiness Spares Package (paragraph 4.2.3.); adds Scan Electronic Microscope/Electron Dispersal XRAY procedures for 36th Fighter Squadron (paragraph 5.1.4.); changes PACAFI 21-108 to PACAFI 21-165 as governing directive for scheduling effectiveness (paragraph 5.3.); and attachment 2 is deleted. A bar (|) indicates revision from the previous edition.

1. 51st Logistics Support Squadron Engine Management Procedures:

1.1. Engine Management (EM) will:

- 1.1.1. Perform engine manager duties prescribed by applicable instructions and technical orders and is the point of contact for engine inputs and transactions through the use of automated engine tracking systems.
- 1.1.2. Maintain all required F110 & TF34 AFTO Form 95, **Significant Historical Data**, and automated engine historical records.

1.1.3. Input engine data transactions into the Core Automated Maintenance System (CAMS) and Comprehensive Engine Management System (CEMS) databases within 1 duty day of receipt.

1.1.4. Process flight data from the Comprehensive Engine Trending and Diagnostic System (CETADS)/CEMS IV into CAMS and CEMS.

1.1.5. Upgrade time change items to MICAP status when items have not been received by the required due date/time, IAW PACAFI 23-203, paragraph 6.2.3.

1.1.6. Produce a TCTO status sheet in grounding date sequence and submit to Wing Plans & Scheduling Section by close of business Wednesday of each week.

1.1.7. Produce a daily engine status report and send to Wing P&S by NLT 0900 everyday for inclusion in the daily production meeting. As a minimum, copies of the status slides should be sent to the Command Engine Manager, Queen Bee Facilities, Logistics Group commander, LSS commander, and Propulsion Flight Chief.

1.1.8. Perform and document accomplishment of a quarterly physical inventory of all engines assigned to the 51 FW. This should also be done every time a new engine manager is assigned.

1.1.9. Ensure post-maintenance part/serial number verification sheets have been updated in CAMS/CEMS on F110 and TF34 engines being returned to the Fighter Squadrons (FS) after any maintenance (i.e. quick turn, minor maintenance, etc.) has been performed by the Propulsion Flight.

1.1.10. Process and clear CAMS suspenses for all engine/module, engine related Time Compliance Technical Orders (TCTO), Time Change Items (TCI), and Special Inspection maintenance actions.

1.1.11. Establish F110 and TF34 work package cover sheets for engines/modules inducted into Propulsion Flight for maintenance, to include a listing of applicable TCTOs, TCIs within replacement criteria, and Module times/cycles remaining. A pre-induction meeting will be conducted between EM and Propulsion Flight prior to start of any maintenance. (This does not include engines inducted for quick turn maintenance.)

1.1.12. Produce a weekly F110 & TF34 engine time change forecast and distribute to the appropriate fighter squadrons by close of business Wednesday of each week for line replaceable units (LRU) and shop replaceable units (SRU). LRU parts-on-hand (POH) assets will be installed within the time frame established in paragraph 5.3.

1.1.13. Notify Non-Destructive Inspection (NDI) element of engine changes for oil analysis program updates.

1.1.14. Be responsible for shipment of all engines assigned to the 51 FW. Any engine shipped to depot must first be coordinated between EM and PACAF. EM will prepare required engine shipment paperwork for any shipment for Osan. For exercises/deployments, Propulsion Flight Chief in coordination with EM will identify deploying engines and complete/file DD Form 1348, **DOD Single Line Item Requisition System Document**. The Propulsion Flight will prepare all other processing paperwork.

1.1.15. Manage engines received in wartime in conjunction with the Propulsion Flight. The Logistics Group Commander will control these spare engine assets. All automated maintenance documents for all Mission Design Series (MDS) can and will be initialized into CAMS after coor-

dination with the Operations Support Squadron Database Manager. Engines installed in aircraft received in wartime and assigned to the 51 FW will be managed as above. As soon as possible after arrival, contact will be made with the Senior Maintenance Officer or Production Superintendent to obtain serial numbers of aircraft and engines. The EM incoming engine checklist will be used to verify the applicability of inspections IAW the respective -6 technical order, TCTOs and TCI's. All engines will be assigned to Stock Record Account Number (SRAN) 5294 for accountability and management. Hardcopy records will be filed and reviewed IAW current EM procedures. All engines (if applicable) will be incorporated into the CETADS database and follow procedures in paragraph 5. below. EM will provide automated data system support to any augmenting personnel to assist in completing EM functions.

2. 51st Maintenance Squadron Propulsion Flight Procedures:

2.1. Propulsion Flight will:

- 2.1.1. Ensure all CAMS inputs are complete for TCTO actions and TCI removal/installation not later than the end of the duty day the maintenance was performed. This procedure is required for EM to properly update CAMS/CEMS databases with accurate status/location.
- 2.1.2. Prior to test cell operation, verify all installed TCI's are properly reflected in CAMS.
- 2.1.3. Ensure a serial/part number sheet is completed and forwarded to EM section immediately after completion of test cell run on engines being returned to the Fighter Squadron (FS) after Jet Engine Intermediate Maintenance (i.e., minor maintenance, etc.). Engines will not be released back to the FS until EM has completed update of serial/part number sheet in CAMS/CEMS.
- 2.1.4. Prepare complete comprehensive post-maintenance summary for EM input into CEMS database.
- 2.1.5. Ensure adequate time remains on components being released to the FS for cannibalization. Ensure all proper documentation is received prior to release of the component.
- 2.1.6. Provide adequate secured storage area for TCTO kits, supply point assets, and on-hand TCI components.
- 2.1.7. Ensure all engine history and database transactions are completed by EM prior to placement of engine(s) in spare status and issuance to a flying unit. Engines not ready for installation will be identified as such on the engine placard.

3. Quality Assurance Procedures: Quality Assurance will perform quality assurance duties prescribed by applicable instructions and technical orders. Quality Assurance will maintain engine work package standards as applicable in 1.1.11.

4. Deployment Procedures:

4.1. Engine Management will:

- 4.1.1. Provide training to appointed Deployed Engine Monitors (DEM).
- 4.1.2. Provide a list of engine times, hours, cycles, etc., remaining on all EM tracked Special Inspections (SIs) and TCI modules/components of each deploying engine. Status of engine TCTOs will also be identified. The list will be provided only after the deploying flying squadron

has identified aircraft/engines scheduled for deployment to EM. If TCI and TCTO parts/kits are available, EM and FS Plans & Scheduling (P&S) will coordinate with maintenance personnel to ensure maintenance is accomplished prior to deployment. This is necessary to avoid scheduled maintenance during TDYs.

4.2. Flying Squadron's will:

4.2.1. Appoint in writing (see attachment 1) a minimum of 2 personnel (AFSC 2A6X1A) per Fighter Squadrons to accomplish DEM duties during deployments/Base-X operations. This is to ensure there will always be trained personnel available to accomplish DEM duties. Forward a copy of the appointment letter to EM for filing.

4.2.2. Provide EM a tentative list of aircraft that are scheduled to deploy at least 2 weeks prior to any scheduled deployment or immediately for short-notice deployments. Provide EM a firm list of deploying aircraft not later than 1 week prior to actual departure.

4.2.3. Ensure Readiness Spares Package kits are depleted of assets prior to 51 MXS Propulsion Flight Chief or designated representative authorizing cannibalization from serviceable engine.

4.2.4. Ensure any spare engine(s) cannibalized from or serviceable engines removed and not reinstalled in aircraft during deployments are inspected by the Propulsion Flight for serviceability prior to placement in spare status.

4.3. Deployed Engine Monitor (DEM) will:

4.3.1. Report to EM for a pre-deployment briefing not later than 1 week prior to deployment (immediately for short notice deployments).

4.3.2. Ensure all data collection is completed and transferred to EM via telephone, e-mail, fax, or message not later than 0900 the day following the last flight of each day. This procedure is necessary to ensure the most current engine data is reflected in CAMS/CEMS. Use 51 FW Form 22 (EF), **Engine/Component Removal and Installation**, to record the part and serial numbers of engines and components that are changed while deployed. Turn form into EM within 24 hours after return to home station.

4.3.3. Ensure a hard copy and disk with CETADS/CEMS IV data is transferred with repairable engines when one is removed at the deployed location.

4.3.4. Complete all engine shipping paperwork for redeployment. Engine shipment TCN numbers will be provided to EM at Osan AB via telephone, e-mail, fax, or message prior to redeployment. Engines that were removed during a deployment must have a "SHIPPER'S DECLARATION FOR DANGEROUS GOODS" form completed and signed prior to engine shipment.

5. 25th/36th Fighter Squadron Procedures:

5.1. For engines with installed engine diagnostics unit (EDU):

5.1.1. Download the EDU for each engine after the last flight of each day and transfer the data into the FS CETADS/CEMS IV computer workstation.

5.1.2. Perform daily engine reconciliation with EM by 2100 hours via LAN connection or disk. When night flying, send engine downloads to EM no later than 1200 the following duty day.

5.1.3. Download and reconcile with EM the last flight's data when an engine or TCI is removed/replaced.

5.1.4. 36th Fighter Squadron will participate in Scan Electronic Microwave/Electron Digital XRAY program for oil analysis processing. Compliance will be in accordance with local policies and directives as established by the NDI section.

5.2. FS scheduler will assist EM in tracking, forecasting, and scheduling all engine-related special inspections listed in the applicable weapons system –6 TO. All jobs will be scheduled against the engine, not the aircraft. EM scheduler will process all CAMS suspenses for completed engine inspections.

5.3. Fighter squadrons will coordinate with EM to schedule Line Replaceable Unit (LRU) TCIs replacements prior to over-fly status. TCIs will be printed in the weekly schedule and scheduling effectiveness tracked IAW PACAFI 21-165. Special circumstances for over-flies (i.e., consolidate aircraft maintenance, aircraft induction into phase, aircraft deployed, etc.) will be reviewed on a case-by-case basis and coordinated with EM.

6. Forms Prescribed: 51 FW Form 22 (EF).

DAVID E. CLARY, Brigadier General, USAF
Commander

Attachment 1**SAMPLE DEPLOYED ENGINE MONITOR APPOINTMENT LETTER**

MEMORANDUM FOR 51 LSS/LGLOE

FROM: (APPROPRIATE FLYING SQUADRON)

SUBJECT: Deployed Engine Monitor Appointment Letter

1. The following individuals assigned to the (unit) are appointed Deployed Engine Monitors:

NAME:

RANK:

DUTY PHONE:

DEROS:

2. This letter supersedes all previous letters same subject.

(Appropriate Signature Block)

Attachment 2**OSAN AB INFORMATION**

The following information is provided to assist you in contacting Engine Management at Osan. Please utilize all the options for EM first, then try the Maintenance Operation Control Center (MOCC), and finally as a last resort use the Command Post. Keep in mind that if you must fax the MOCC or CP that they might not be expecting anything from you. Send a cover sheet to let them know where it is supposed to go. Ex: "Attention Engine Management"

Engine Management DSN: 784-9303; COMM: 011-82-333-661-9303; FAX: 784-8586

51 FW MOCC DSN: 784-4105; FAX: 784-2910

51 FW Command Post, DSN: 784-7000; FAX: 784-3279